

The Great Egg Drop Project



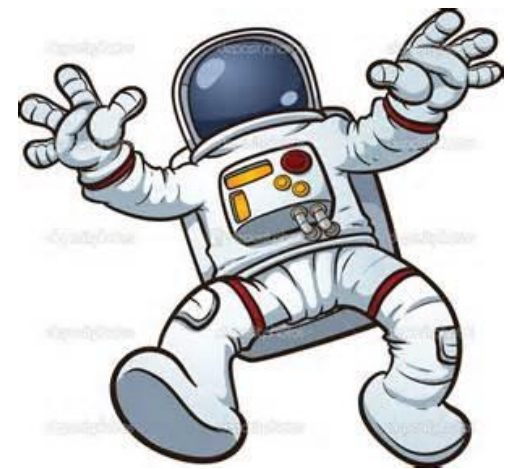
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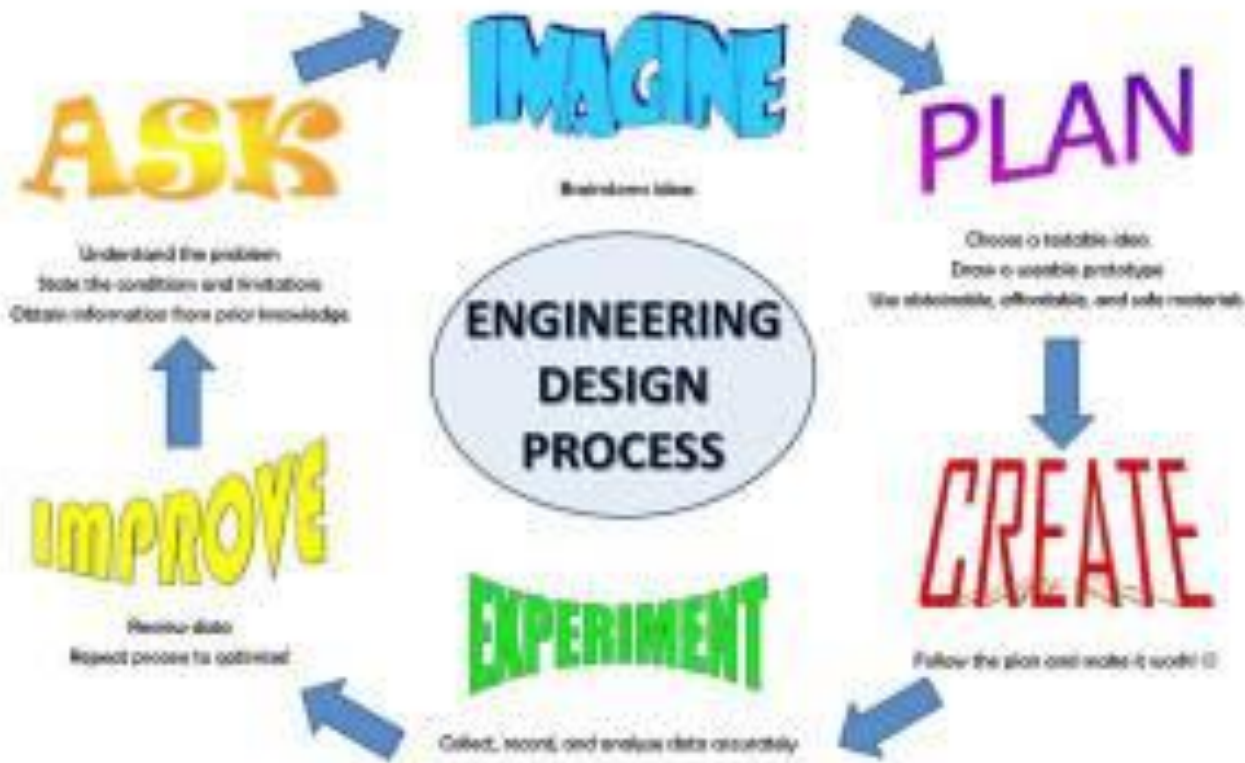
Group Member Names:

When an astronaut returns from the International Space Station (ISS), he relies on the engineer's capsule design to return him home safely.

QUESTION: Using the Engineering Design Process, can an Astronaut (egg) be packaged in a capsule (container) so that it remains undamaged after returning from the ISS (dropped from the top of the bus parking)?

CONSTRAINTS: container must be smaller than 6x6x6 inches and must weigh at least 1lb







Ask

What is the problem? _____

What are the parameters? _____

What are the constraints? _____

Imagine

What does our container need to be successful? _____

Ideas for container? _____

Ideas for safety of egg ? _____



Your Plan

Draw out and label the container and the safety features.



Group Plan

Draw out and label the container and the safety features your group decided on.



Create

Based on your groups plan, list out your supplies and quantities.

Item	Quantity



Experiment

Draw before & after pictures of your project.

Before

After

Try it!

Improve

Based on your experiment, what changes could you make to your capsule for it to be more successful. What worked well?
What needs to be improved?

BUILD IT.
BREAK IT.
IMPROVE IT.

Rubric

Categories	Excellent 10 pts	Good 8 pts	Fair 5 pts	Poor 4 pts
Constraints	Student followed all directions and adhered to project limitations (constraints).	Student followed most of the directions and project constraints.	Student partially followed project directions and mostly adhered to project constraints.	Student did NOT follow directions and did NOT adhere to project constraints.
Construction	Great care taken in construction process so that the structure is neat, attractive and follows plans accurately.	Construction was careful and accurate for the most part, but 1-2 details could have been refined for a more attractive product.	Construction accurately followed the plans, but 3-4 details could have been refined for a more attractive product.	Construction appears careless or haphazard. Many details need refinement for a strong or attractive product.
Participation	Student was on-task and focused during entire activity. Regularly contributed to group, engaged during performance and project packet neat & complete	Student mostly on task, some contributions, engaged during performance, & project packet mostly complete and/or legible.	Student often distracted but some contributions, mildly engaged in performance, & project packet incomplete and/or illegible.	Student distracted much of the time and not engaged. Student did not complete pack.
Egg survival	Egg remains in project and has no cracks.	Egg remains in the project and egg is has some cracks in the shell but nothing is leaking out.	Egg might have come out of the project AND/OR the egg is leaking but not totally broken.	Egg came totally out of the project OR the egg is severely broken to total smashed.
Size of container	Outside of container is smaller than 6x6x6	Outside of container is exactly 6x6x6	Outside of container is slightly more than 6x6x6	Outside of container is significantly more than 6x6x6

Score: _____ x 2 = _____ Points Earned